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Original Articles

A SPECIMEN OF CYCLO-CEPHALUS.*

BY J. C. FALK, M.D., St. Louis, Mo.

THE mother, 27 years old, had been delivered of two healthy and normal children, the last about two years previous. There was no history of monstrosities on either the maternal and paternal side of family. The father is of American parentage, intelligent, and in good physical condition. The mother is of German descent, delicate in physique, and for

about a year has been failing in health. She is now suffering from pulmonary tuberculosis, which is making rapid onslaught upon her lung tissue.

There is no history obtainable of any maternal impressions which might suggest a causative factor. There was nothing unusual about the pregnancy except that labor set in about six weeks later than the time the mother had expected.

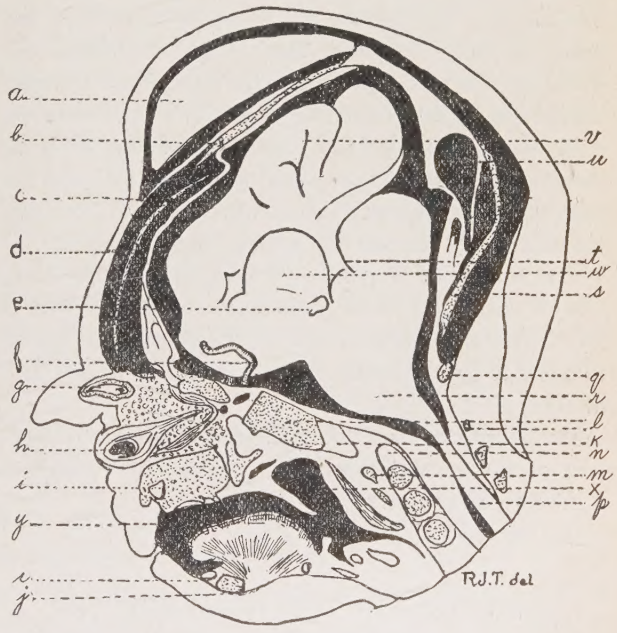
She felt "life" regularly and normally until twelve days before confinement, when there occurred during several hours a series of violent fetal movements which made her sick and caused her to remain in bed for a day.

During the following days until labor began she attended to her household duties, but no longer felt any movements of the child. After a somewhat prolonged labor there was spontaneous delivery of a dead child.

*Read before the Medical Society of City Hospital Alumni, June 1, 1899.

The child was, with the exception of the head, a normal, well-developed, well-nourished male, weighing about seven pounds and seemingly at full term.

From the macerated condition of the cuticle, the history of convulsions twelve days previous to birth with no subsequent "life" movements, I infer that death of the fetus took place over a week before its delivery.



a. Blood clot in scalp (caput succedaneum). b. Parietal bone. c. Frontal bone. d. Dura. e. Conarium. f. Mid. cerebral artery. g. Cartilage supporting Nasal (?) Rudiment. h. Eye. i.i. Teeth. j. Mandible. k. Basi-occipital. l. Basi-sphenoid. m. Ant. arch of Atlas. n. Odontoid process of Axis. o. Post. arch of Atlas. p. Spinal cord. q. Occipital bone. r. Bulb. s. Occipital bone. t. Cerebellum. u. Torcular Herophili. v. Prosencephalon. w. Diencephalon. x. Naso-pharynx. y. Buccal cavity.

By the exercise of some diplomacy I was enabled to secure the head of the child which is here presented. It will be observed that the head is somewhat small for a seven-pound infant, its general outline being, however, about normal.

The occiput is illy developed; the cranial bones are all freely movable upon each other so that the calvaria may be flattened out in any direction. The ears are normal in appearance and properly placed. The mouth is quite small, and inasmuch as the inferior maxilla has a limited amount of motion, one can barely insert the tip of the little finger into the buccal cavity.

In the center of the face, just over the mouth, is a single orbital cavity containing one eye. To all appearances it is a normal eye-ball, pupil, iris, choroid, and conjunctiva, being like those of a new-born child. The eye-lids and lashes are well developed. The nose is a cutaneous proboscis an inch in length situated immediately above the middle of the eye in the center of the forehead, resembling the penis of an infant. It appears to be a purely cutaneous appendage having no bony constituents and apparently no attachment to the skull beneath. At the tip there is a shallow depression having a minute opening through which a bristle may be passed along the rudimentary nares for about two inches.

The accompanying photograph was taken after the specimen had been in alcohol for three weeks, hence the drawn and irregular contour of the face and scalp shown in the picture.

Dr. R. J. Terry, of the Medical Department of the Washington University, to whom I submitted the specimen for dissection, has kindly furnished the drawing of a mesial section, with a preliminary statement of the findings from an inspection of cut surfaces.

It was found that the Eustachian tubes are both present and that all the cranial nerves are in pairs except the first (olfactory lobes), which are not discernable at all, and the second (optic), which is single.

The cerebrum, it will be noticed, is very small, almost rudimentary in its proportions. The pharynx is not imperforate, as seems to be the case in the figure; this is due to the section being to one side of the middle line.

Dr. Terry promises to make a more minute dissection of the cranial contents and present the result in a subsequent report.

2700 Stoddard Street.

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

By B. H. PORTUONDO, M.D., Belleville, Ill.

THE term antitoxin was introduced by Behring, in 1893, for the specifically antipoisonous substance of tetanus and diphtheria serum. He called them blood antitoxins, to distinguish them from antitoxins derived from other sources.

Inasmuch as each antitoxin cures or protects only against the disease produced by the micro-organism corresponding to it, antitoxic therapy is eminently a specific therapy.

What is antitoxin? This is a very difficult question to answer. Behring believes that it is a proteid, and that the "antitoxic proteid bodies are carried into the blood from such cells as, during immunization from tetanus or diphtheria toxin, undergo alterations of their actual and potential qualities." Others, however, hold different views. All we know at present is, that it is a soluble substance and that it renders the toxin inert.

By experimenting on animals with the blood serum of diphtheritic patients, Loas has demonstrated that in severe cases of diphtheria the blood contains toxin. He has also shown that antitoxin is present in the blood at some period after an attack of diphtheria, or after the use of a curative dose of antitoxin. This is not the case, however, immediately after the attack of diphtheria, nor after the use of an immunizing dose of antitoxin. It is true of antitoxin, as it is of every important discovery in medicine, that it is not the sole product of the researches of any one man, but it is due to the combined efforts of preceding and contemporaneous workers, each one forging a link of the chain, the last one combining all the preceding efforts into a grand harmonious whole.

Without going very far back, and limiting myself only to those workers more intimately connected with the bacteriology and serum therapy of diphtheria, I will mention that in 1883 Klebs discovered, and in 1884 Loeffler succeeded in cultivating, the micro-organism which is now practically accepted by all observers as the causative element of diphtheria. Roux and Yersin demonstrated, in 1887, that the lower animals developed all the symptoms of diphtheria when injected with the poisons resulting from the diphtheria bacillus in artificial cnltures. Also that the general symptoms accompanying the disease in man were due to the absorption of this poison or toxin. Loeffler, in 1888, inoculated a guinea pig with diphtheria. It sickened and recovered, and failed to be affected by repeated inoculations of virulent cultures, thus showing that it was entirely immune.

In 1890, Behring and Kitasato published their reports on the immunization against diphtheria and tetanus, showing "that the blood of an animal which has an acquired immunity against tetanus or diphtheria when added to a virulent culture of one or the other of these bacilli neutralizes the pathogenic powers of such cultures, as shown by inoculations into susceptible animals, and also that cultures from which the bacilli have been removed by filtration, and which kill susceptible animals when injected in very small amounts, have their toxic potency destroyed by adding to them the blood of an immune animal."

In 1891, Kitasato discovered that the blood serum of animals immunized against tetanus had not only prophylactic but also curative properties. He found that an injection of serum could cure mice inoculated with tetanus germs after tetanic symptoms had appeared.

Further experimentation has, with an unfailing regularity, confirmed the above observations, so that

they have been universally accepted as truth by all bacteriologists. On the above facts rests the foundation for the treatment of human diphtheria by antitoxin.

Roux and Yersin showed that different cultures of diphtheric germs varied greatly in virulence. This accounts for the fact that cases with small amount of membrane formation often require more antitoxin than others with a great deal more. The extent of membrane formed is dependent solely upon the vegetative powers of the bacillus, and bears no relation to its virulence.

It soon became evident that if antitoxin was ever to become a practical treatment for diphtheria some other animal than the guinea pig would have to be used for its production. Different observers began to employ larger animals, such as the cow, the sheep, etc., but finally agreed upon the horse as the most suitable. By nature he is immune to diphtheria, and this immunity is greatly increased by the treatment to which he is subjected. He stands the injections of diphtheria toxin without any apparent discomfort, and furnishes us with great amounts of serum from time to time. This serum is harmless to human beings, even when injected in large amounts.

In 1892, Aronson reported to the Berlin Medical Society on the immunization of human beings against diphtheria. In the following year he reported that he had so increased the power of the serum that protective inoculation of children exposed to diphtheria was then a practical fact. In February, 1894, Roux's serum was used in the Hospital des Enfant Malade of Paris, France, with a mortality in 448 cases of only 24.33 per cent. against a mortality of 51.71 per cent. in 3,971 cases treated in the same hospital during the preceding four years. At the same time the mortality in the Hospital Trousseau, where no antitoxin was used, was 60 per cent.; thus showing very evidently that the diminished mortality was due to antitoxin. This was the first time that antitoxin was used against human diphtheria. In March, 1894, Aronson's serum began to be used in the Children's Hospital of Berlin.

In September, 1894, Behring and Roux read papers on the treatment of human diphtheria with antitoxin at the International Congress of Hygiene that met at Buda-Pesth. The reputation of the authors making the report, the very favorable clinical results they presented, at once obtained for antitoxin the universal attention not only of the profession, but also of the world at large. Different observers began to confirm with their own statistics the brilliant results reported, and the fame of antitoxin extended far and wide, until it is no exaggeration to say that it is now recognized all over the world as the sovereign remedy for diphtheria, and I think a truly specific one in those cases due to the Klebs-Loeffler bacillus without the intermixture of any other bacilli. It still has some enemies, more powerful by their worth than by their number; but they are diminishing. What antitoxin has done to diminish the mortality from diphtheria is to be learned from the results obtained by careful observers in several epidemics, at all seasons, and in different years, rather than by the experience of any one man. On this account I have the pleasure to quote from the report of the Chicago Board of Health, published last March. I will mention in passing that in cases of pharyngeal diphtheria my mortality has been 6 per cent., and that my experience with membranous laryngitis, where I was allowed to use antitoxin, is too small to be worth much; it is limited to three cases, of which I had one.

On October 5, 1895, the Chicago Board of Health began the use of antitoxin. From that date up to February 28, 1899, a period of nearly three and a half years, a total of 6,342 reported cases of diphtheria were visited by the department inspectors. Of this number 4,311 were bacterially verified as true diphtheria, and 4,076 cases were treated with antitoxin, the remaining 235 cases refusing antitoxin, or being treated by other physicians, the results are not known. There were 3,795 recoveries, 276 deaths, and 5 cases were still under treatment at the close of February, 1899, giving a mortality of only 6.77 per cent. The results for the four months previous to the publication of the report were even more favorable. During November and December, 1898, and January and February, 1899, 423 cases were treated. There were 398 recoveries, 20 deaths, and 5 remaining under treatment February 28. The average mortality rate was only 4.78 per cent.

The report further states that the death rate of 6.77 per cent. from diphtheria during the past three years since antitoxin has been used, shows a decline of 43 per cent. as compared with that for previous three years when other methods of treatment were in vogue.

The severest test to which antitoxin could be put was its use in membranous laryngitis; this was the rock on which antitoxin was expected to founder; but that it stood the trial successfully will be seen by the report of the Committee of the American Pediatric Society, appointed to investigate the value of antitoxin in laryngeal diphtheria. In 1,704 cases collected, the mortality was 21 per cent. The mortality of 637 intubations was 26 per cent.; of 20 tracheotomies 45 per cent.; of 11 tracheotomies subsequent to intubation 63 per cent.; of 1,036 non-operated cases, 17 per cent. Before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas now, with the use of antitoxin, only 39.21 per cent. require it. The percentage figures have also been reversed, formerly 27 per cent. approximately repre-

senting the recovery, while now, under antitoxin treatment, 27 per cent. represents the mortality.

The cases analysed occurred in the practice of 422 physicians, in private practice in the United States and Canada. The committee making the report was composed of Drs. Northrup, O'Dwyer, Holt and Adams.

The results of an injection of a curative dose of antitoxin in a suitable case are: an arrest of the disease; the process that before our interference was rapidly advancing comes to a stand-still. A cessation in the growth of the membrane, which at the same time begins to curl up upon itself preparatory to its coming away, or if it was thick and extensive it becomes pulpy, and it is then cast away. It totally disappears within thirty-six or seventy-two hours, and when the process begins it does so with greater rapidity than we are accustomed to observe when using the ordinary remedies for diphtheria. The pulse becomes slower, although it does not come down with the same rapidity with which the membrane disappears. The general condition of the patient is greatly improved. If there was fever the temperature begins to fall, and finally convalescence is established so quickly and so easily that we are apt to doubt that we have had a real case of diphtheria.

The dose of antitoxin is expressed in terms of units, meaning by a unit ten times the amount of antitoxin serum required to protect a guinea-pig against ten times the least certainly fatal dose of diphtheria toxin.

In experimental diphtheria we know beforehand the amount of poison we inject, and therefore we know how much antitoxin we need to neutralize it. In the nature of things we cannot ascertain how much or how virulent is the poison a given case of human diphtheria has absorbed before we are called in. The amount of antitoxin to be given is determined, at present at least, by the general experience of the profession. We may estimate, although very roughly, the amount of antitoxin needed, by the severity and duration of the attack, the extent of the membrane and the age of the patient. Our aim should be rather to give too much than too little, and this is a safe rule to follow, as we can truthfully say that antitoxin is harmless. In the hundreds of thousands of cases where it has been used, in only four instances has it been accused of producing death, and even those cases could be explained under different hypotheses.

The consensus of opinion of the profession, as expressed by Dr. Hart in his book on "Diseases of Infancy and Childhood," seems to be in favor of the following doses: For children under 2 years of age, in mild cases, 600 units; in severer cases, or in laryngeal stenosis, 1000 units. For children over 2 years of age, in mild cases, 1,000 units; in severe cases, or in laryngeal stenosis, from 1,500 to 2,000 units. In cases of great severity, especially if seen late, 3,000 units. Those doses are to be repeated in twelve hours if there is no improvement, and again in twenty-four hours if the course of the disease is unfavorable. Under the head of severe cases are grouped all cases that at the first visit present nasal discharges, exudate over pharynx or over more than one tonsil.

The youngest patient treated by antitoxin was an infant 9 days old, who received 750 units of antitoxin in two doses; made a rapid recovery. This case was reported by Dr. D. G. Sanor in the *New York Medical Journal.*

Besides using a large enough quantity of antitoxin and repeating it if necessary, we must, if we wish to be successful, begin its use very early. All statistics show that the most brilliant results are obtained if antitoxin is used the first day, and the reason for this is not far to seek. Antitoxin has no retroactive action. It begins to act and prevents further changes in the cells from the time of its administration only, so that when injected late the changes already existing may be so grave as to preclude the possibility of recovery. Even when injected early we may fail in some cases, probably because in them irreparable changes take place with astounding rapidity. Behring says that beyond the third or fourth day the action of the serum is doubtful. Both clinical experience and experimental observation sustain the above facts. In this regard the following statistics, compiled by Foster, are highly instructive:

He has tabulated 2,740 cases of diphtheria treated with antitoxin, including those requiring tracheotomy and intubation. Of this number 509 died, a mortality of 18.54 per cent. All cases injected the first day recovered. Of those injected on the second day, 2.83 per cent. died. Of those injected on the third day, 9.99 per cent. died. Of those injected on the fourth day, 20 per cent died. Of those injected on the fifth day, 33.33 per cent. died, and of those injected after the fifth day, 41.38 per cent. died.

Antitoxin is administered hypodermically, and the site selected is one where the skin is loose and the subcutaneous connective tissue abundant. All aseptic precautions should be observed and all preliminary preparations, such as cleaning of the needle, etc., should be done in an adjoining room, thus avoiding the fright certain to occur if we cruelly allow our little patient to be a witness to them. For the same reason, I select the interscapular region, or that of the hip. The serum should be injected slowly and deliberately and well down into the tissues. It is surprising how rapidly the bleb formed by the injection disappears. Massage of the parts is unnecessary and should not be performed. Antitoxin has also been

administered per os with apparent success. Besides its curative effects the use of antitoxin is sometimes followed by certain disagreeable and unpleasant after effects. They are rare, and probably due to the serum and not to the antitoxin, but nevertheless they do occur. The commonest one is an inflammation of the skin, often in the form of urticaria, at other times simulating scarlatina or measles. Occasionally there is a rise of temperature. Again joints may become swollen and painful. Besides these after-effects, which are accepted by everyone, the opponents of antitoxin have accused it of producing post-diphtheritic paralysis, heart failure, and albuminuria. The evidence they bring forth to substantiate their charges are, I think, very deficient. Dr. Joseph McFarland, in a very able paper on "Post-Diphtheritic Palsy and Antitoxin," written for the *New York Medical Record*, and published by that journal in January, 1898, proves conclusively that all the cases of palsy occurring after the use of antitoxin are due to this agent only in so far as it has saved the patient from death. He shows, by a series of experiments on guinea pigs, that they develop palsy when the amount of antitoxin injected is not enough to counteract all the amount of toxin given. The same thing holds good in human diphtheria, and the paralysis, etc., are due to the fact that we have injected just enough to save life, and not sufficient to overcome all the toxins in the system.

Another favorite argument of those who oppose antitoxin is that it has not diminished the mortality of diphtheria, and that the favorable results reported are due to the fact that only cases with Klebs-Loeffler bacillus are included, and that these cases would have done as well under any of the old plans of treatment also, that it is not fair to compare hospital cases, with good management and best possible surroundings, with cases treated outside of those institutions. To test all these questions, Clubbe treated two parallel series of cases of diphtheria at the Sidney Children's Hospital, and reported his results in the *British Medical Journal*. Three hundred cases were treated with and 300 without antitoxin. In all the cases the diagnosis was confirmed by the presence of the Klebs-Loeffler bacillus. All the cases were treated in the same hospital, by the same physicians, and general management was in all cases essentially the same. Of the 300 cases treated without serum, 158 died, a mortality of 52.7 per cent.; 101 were cases of simple diphtheria and 23 of them died, a mortality of 22.7 per cent.; 199 cases required tracheotomy and 135 of them died, a mortality of 67.8 per cent. Of the 300 cases treated with serum, 60 died, a mortality of 20 per cent.; 171 cases were of simple diphtheria, with 11 deaths, a mortality of 6.4 per cent. Tracheotomy was required in 129 cases and of these 49 died, a mortality of 37.9 per cent. We see, then, that in the 300 cases treated without antitoxin the mortality was 52 7 per cent., while in those treated with antitoxin it was only 20 per cent. The cases of simple diphtheria treated without antitoxin give a mortality of 22.7 per cent., and when treated with antitoxin the mortality was only 6.4 per cent. The cases requiring tracheotomy, when treated without antitoxin give a mortality of 67.8 per cent., and those treated with antitoxin, the mortality was only 37.9 per cent.

The above was certainly a fair test, and antitoxin has once more disappointed its enemies.

Another and a very important use of antitoxin, is as a preventative of diphtheria; but as this paper is already longer than I would like, I leave for another member of the Society the pleasant task of presenting the merits of antitoxin as a prophylactic agent.

Notes and Items

The following is the programme for the St. Louis Medical Society of Missouri, Saturday Evening, October 7th, 1899: "Presentation of Specimens, Illustrating Some Points in the Pathology of Appendicitis," by Dr. John Young Brown.

Rosenblatt is authority for the statement that tubercle bacilli are easily detected in the stools, if, preceding the examination, opium is administered in doses sufficient to cause constipation. This results in the discharge of quite firm masses, which are usually covered with mucus and in this the tubercle bacilli are easily found.

The consumption of quinine in the United States is quite large. It is stated that 129,000,000 grains have been taken by the soldiers during the past year. Some of the patients in the army hospitals of Cuba and Puerto Rico have been given as large doses as three hundred grains a week. Nearly all of the troops that serve in Cuba and Puerto Rico take some quinine during their stay.

An association has been formed of which Dr. Cyrus Northrup of the State University of Minnesota has been chosen president, and Governor Roosevelt of New York vice-president, to establish a national park in Minnesota. It aims at preserving the head waters of the Mississippi River and about the only large tract of natural forest land left in the United States. Not only would it create a sportsmen's paradise and preserve one of the finest and most picturesque of our natural wooded regions, but the value of this from a public standpoint is unquestioned. In this region should be established the large public sanatoria for the treatment of tuberculosis. The soil and dry atmosphere of this region especially recommend it for this purpose.

The Electrical Review describes a process of E. Andreoli by which ozone is produced in the electrolysis of water. Prior to 1860 a French patent was issued for a process by which 38 per cent. of the gas given off at the anode was ozone. This cheap production of ozone may furnish medicine with one of its most potent remedies for disease; certainly these experiments are of interest to medical men.

Yamagiva has made an extensive study of beriberi, and comes to the quite new conclusion that this is due to diseased rice. This food produces a chronic intoxication, which, as it is described, seems to resemble somewhat the intoxication of ergot, as there is a contraction of the peripheral arterioles throughout the body. The resulting pathologic changes which make up the clinical picture of the affection are due to this anemia.

In 1791 Benjamin Franklin bequeathed to the city of Boston the sum of 1,000 pounds sterling. This sum now amounts to $400,000, and is known as the Franklin Fund. There has been much discussion of late years as to its proper disposal, and a subcommittee having the subject under consideration has decided to erect a public hall in the South End. It is to be known as the Franklin Building and is to be used for public assemblies; in addition there will be various rooms where lectures are to be given by especially trained persons upon trades, economics and sociologic topics.

On July 8th last, the last great intercepting sewer of Paris emptying into the Seine was formally closed, appropriate ceremonies being held. A glowing tribute was paid to several physicians, among whom were Bourneville, Cornil, and Proust. The entire sewage of Paris is now used for irrigating and fertilizing purposes. The large barren tracts of Acheres and Pierrelay have been turned into vegetable gardens of rare fertility. In 1899 Paris celebrates the diversion of her sewage from one of the rivers of France, and Chicago celebrates the emptying of its sewage into the Illinois River.

Prof. John A. Fordyce, in his address before the American Dermatological Association, pointed out the changes which take place in the products of micro-organisms according to the soil upon which they are grown. This may explain the varying character as it affects the different tissues. It is known that tuberculosis of the joints, skin, and lungs differs materially in rate of progress and constitutional reaction. This Fordyce would attribute to actual change in the character of the toxin secreted by the organism. He does not mention a factor which is evidently of importance, namely, that the quantity of toxin produced by the organism may vary, and consequently the clinical picture. It is easy to understand how this could be varied by changes in the soil upon which the bacillus is grown.

The germ of yellow fever is furnishing ammunition for a lively scientific tilt between Sanarelli, the discoverer of the *bacillus icteroides*, and Sternberg, who thinks that he may have found the germ of yellow fever, but not being quite sure, has labeled the product of his research *bacillus x.* One of the strongest criticisms that can be raised regarding Sanarelli's bacillus is that it is not uniformly found in yellow fever, thus failing in one of the essentials laid down by Koch. Sternberg and his co-worker would throw further doubt upon the pathognomonic qualities of the *bacillus icteroides* by stating that they have sought the germ under the conditions formulated by Sanarelli and have not been able to isolate it. The latter retorts that this is due to a failure of technique. The recent report of Wasdin and Geddings, who practically accept the conclusions of Sanarelli, would indicate that the latter has the best of the argument so far. To use the sporting vernacular, the matter is now "up to" the Surgeon-General.

The enormous amount of food adulteration calls for an active campaign in the various State legislatures, and it may be questioned whether it will not ultimately be necessary, in view of the interstate commerce laws, for the general government to take up the subject of food adulteration. It is disgraceful that the nation has done so little in this direction, and while it exacts a tax upon many products, such as whiskey, beer, and tobacco, it would be very simple to guarantee the purity of these productions. A government stamp upon a package ought to assure the purchaser that the contents were as represented. The question of food preservatives and the extensive use of formaldehyde in the preservation of milk and other substances call for further investigations, and the making of laws directing what, if any, preservatives may be employed and in what proportions.

The magnitude of the campaign in the Philippines is reflected in the following requisition for medical supplies, which included 540 items: 10,000,000 quinine tablets; 7,500,000 grains of quinine in bulk; 20 tons of epsom salts; 5,000 bottles of paregoric; 3,000 bottles of iodoform; 8,000 bottles of collodion; 5,000 bottles of chloroform; 2,500 tins of ether; 10,000 quarts of whiskey, and 7,000 quarts of alcohol. There were also 600,000 compound cathartic pills; 1,000,000 tablets of strychnin; 1,600,000 tablets of salicylate of soda; 12,000 yards of mustard plaster; 3,000 yards of adhesive plaster; 50,000 yards of plain gauze; 5,000 yards of unbleached muslin; 50,000 sterilized bandages; 96,000 roller bandages; 4,000 pounds of absorbent cotton. The order also included 5,000 pieces of each kind of crockery and cutlery necessary to equip hospital mess tables.

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THE TREATMENT OF SHOCK.

Experimental work upon the pathology of shock shows it to have as an essential element a paresis of the vaso-motor nervous system. The maintenance of vascular pressure by contracting the peripheral arterioles is the most efficient means of overcoming the condition. The efforts of surgeons have been largely addressed to the heart, as the symptoms seem to be referable to that organ. Experimental study shows that a heart that is only partially filled with blood beats rapidly and feebly. The physiologist teaches that the veins of the body are capable of containing the entire blood supply; indeed, those of the abdominal region alone are said to have nearly sufficient capacity for this purpose, or, at least, they may contain a quantity which seriously impairs the integrity of the circulation. A marked fall in the peripheral resistance results in a rapid and correspondingly feeble heart's action. This is not to be met by stimulating the heart, as by such means we only aid in emptying the arterial system. The aim should be to use those remedies which cause a prompt contraction of the peripheral arterioles, and so restore the altered balance of the circulation.

A CARD CATALOGUE OF MEDICAL LITERATURE.

With the discontinuance of the *Index Medicus* must come a reversion to the time when the scientific medical student relied on the various centralblatts, year-books and abstracts in the current medical press. These, while performing an important function, are often imperfect or fragmentary. An abstract to be of value must contain the substance of an article in a few words, so as to give an accurate idea of the article as a whole. While it may be necessary to refer to the original, as condensation may be impossible, yet an abstract should be so made that an erroneous conception of what is in the article cannot be formed. Such abstracts are made with great difficulty. Recently, Dr. W. T. Porter, in *Science*, proposes a plan to be applied in the department of physiology. It is, in its essence a centralblatt printed on cards. As proposed by Dr. Porter, the abstracts are to be written by a physiologist, especially learned in the field to which the original belongs. Whenever possible the abstract is to be made by the author himself. The limit of the abstract is to be about 225 words. If an abstract must be longer than this, two or more cards can be used. It is thought by Dr. Porter that 6000 cards yearly would contain abstracts of all articles on physiology.

It is to be hoped that the plan of Dr. Porter will be put in operation at an early date, and that it will be the forerunner of similar series of card abstracts in all branches of medical science.

THE CAUSE OF OLD AGE.

Prof. Mechnikoff, whose fame rests upon the Mechnikovian theory of phagocytosis, has recently come forward with a theory of old age, based upon the omni-important leucocyte. He states that there is a sort of social distinction among the leucocytes, some of these being common, or, as we might translate it, plebeian, while others are noble. The common cells are found in all the organs and may be transformed at any time into connective tissue cells. The noble cells are those which may form part of the parenchyma of any of the organs. Old age is essentially a strife between these two forms, in which the common type, or connective tissue builders, gains the mastery; and thus we have a replacing of normal tissues by connective tissue structures, or a sclerosis. The theory has an element of the picturesque, though as a practical working hypothesis it will probably not be of great value in overcoming the effects of age and of advancing sclerosis. Modern science appears to be looking for the fountain of youth with all the enthusiasm of Ponce de Leon.

THE TONSILS AS A POINT OF ENTRANCE FOR TUBERCULOSIS.

We recently referred to the tonsils as an infection atrium, expressing the opinion that these organs were a frequent source of general infection. Some microorganisms have their habitat in the tonsillar crypts, and under certain exciting conditions they cause a constitutional reaction of the entire system. For years no argument in the support of this have been needed, one only having to refer to the recurring attacks of tonsillar inflammation with the concomitant fever, pain in the back, and malaise, lasting from one to three days. That they are infrequently the start-

ing point of tuberculosis is shown by a recent exhaustive study by von Schreiber. The material which he studied was obtained from three sources: (a) tonsils removed by operation from young persons who clinically presented no signs of tuberculosis; (b) tonsils from those dying with non-tubercular disease or from violence, obtained post mortem; (c) tonsils from persons affected by tuberculosis of varying intensity. Of all material examined, only three cases were found in which a primary tonsillar tuberculosis could be affirmed.

While this is true of the tonsils as a direct avenue of tubercular infection, it is probable that they play a not unimportant role as a predisposing cause. Associated as they frequently are with adenoid vegetations, post-nasal and pharyngeal catarrh, thereby causing decided interference with the normal, air-heating, air-moistening and air-filtering functions, there may be some warrant for the belief of the laity that a catarrh frequently leads to consumption—a relation so often pointed out in the advertisements of catarrh cures in the daily papers.

A COLORADO REMEDY.

The Colorado State Medical Society, at its last meeting, appointed a special committee of five members to distribute to the public literature exposing the advertisements of quacks and abortionists. This movement is practical, as it is along lines of public education. The attitude of the profession upon these questions should be advisory and educational. There is no necessity for the profession to descend into the arena of practical politics in order to secure the passage of laws which compel the people to behave themselves, and its efforts should be largely confined to urging the passage of a public health measure and such acts relating to the registration of medical men. As soon as the profession seeks the passage of a bill, its motives are at once questioned and many believe that self-interest is at the bottom of it. Many individuals and nearly all practical politicians seem to be unable to grasp the idea that a person may undertake a public work for the public good.

ISOLATION OF SCHOOL HOUSES.

Country schools for city children, is the title of an editorial in the *Cincinnati Lancet-Clinic*, Sept. 23, 1899. The editorial in question recommends that our schools, instead of being built in the crowded portions of the city, should be placed in the suburbs, where, under more favorable hygienic surroundings, the education of children should be undertaken. The moral influence would be much better, and the freedom from dust and noise and the abundance of light and air, as well as the possibility of large play grounds, are certainly considerations which strongly recommend the plan. It is thought that it would not be difficult in these days of extended and cheap transportation. The writer calls attention to the fact that the electric cars and other means of transportation are comparatively free from overcrowding at the hours when children start for school, the tide of travel being toward the city. In the evening the conditions are reversed, those engaged in business in the city going away from it, and this leaves the cars going toward the city comparatively empty at the time when the children are going home from school. He states that these views will be met with shaking heads and pessimistic statements, but the plan is all right and much could be done to favor it on the part of the medical profession.

SUBSTITUTE FOR COFFEE.

Chickory, as a substitute for tea and coffee, is strongly recommended. It has long been used as an addition to coffee upon the continent of Europe, and is highly esteemed. The users of this beverage would not think that their coffee was quite up to the mark without the addition. In this country the reverse has obtained, this substance being looked upon as a base adulteration of coffee, and one which alters the flavor in a most objectionable way. The European mixture of chickory contains about two-thirds coffee and one-third chickory. A pamphlet has recently been issued by the United States Department of Agriculture advocating the growing of chickory by American farmers, in which the remarkable statement occurs that much of the dried ground coffee put up in pound papers, with showy labels and attractive names, is simply coffee-grounds rearomatized by a chemical method. The coffee-grounds are collected from asylums, hospitals, hotels and restaurants in which large amounts of coffee are made. Chicory seems to have some advantage over coffee and tea, as it has some tonic properties and is less stimulant. Its excessive use may be followed by congestion of the abdominal organs. In the quantities commonly employed it will do no harm. Better chickory than "rearomatized" coffee.

FOOD ADULTERATION.

The extent to which food adulteration is practiced may be inferred when it is stated that adulteration agents visit butchers regularly for the purpose of selling chemicals for preserving meats. The packages in which these chemicals come give full directions regarding the manner in which they are to be used. As a sample of the extent to which food adulteration is carried on, a recent report from the Commercial Agency Experiment Station shows that out of sixty-three samples of fruit jellies two-thirds were adulterated. Starch and glucose were found in most of them and an abundance of salicylic acid and anilin dyes in many. Salicylic acid was found in twelve samples out of forty-seven of beer and ale.

Society Proceedings

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

Stated Meeting, Thursday Evening, June 1,
The President, Dr. Geo. Homan, in the Chair.

Dr. L. Drechsler reported a case of

Diphtheritic Vaginitis

in a married woman about 28 years of age.

She entered the Female Hospital about Sept. 23, 1897. On the 28th of August previous she gave birth to twins with no unusual complication. About two days previous to entering the hospital had a severe headache. She gave no history of chill or fever. Nothing abnormal was found in the heart or lungs; but she refused a vaginal examination. Mentally she seemed to be below the average type of women who enter that institution. About the second day she consented to a vaginal examination, claiming, however, that she had no trouble with the genital organs. On this day she had a chill followed by a temperature of 104½, and the examination revealed a diphtheritic membrane lining the vagina up to the inner os. In removing parts of the membrane a denuded surface remained. Two culture tubes were inoculated and sent to the Board of Health for examination. Dr. Ravold found the bacilli so virulent that he asked for cultures for immunizing his horse at the Poor House. The patient was immediately sent to the isolation ward and given 3000 units of antitoxin. There was nothing characteristic about the temperature except that it reached 104° and 105°, with the regular form of temperature curve. On the third day the fever showed no sign of abating, so she was given 1500 units and two days later another injection; altogether 7500 units of antitoxin were given. The pulse all the time seemed to be pretty fair, running from 98 to 100 or 110. About the second or third day she showed a very septic appearance and cough, and an intrauterine douche of bichloride, 1-5000, was given. In giving this douche he found he had a very unfavorable patient to deal with; she seemed not to appreciate what was being done for her, even using force to keep the doctor away. After the douche the temperature ran up to 105°. The patient suddenly became irrational. The next morning sterilized water was used and the temperature ran up to 104½, so he could not account for the rise of temperature except as a nervous phenomenon. At the end of four days another culture was made, and diphtheria bacilli and streptococci were found present. About the eighth day only the streptococci were found, and at that time the membrane had disappeared. The temperature had nothing unusual about it except that it persisted for about three weeks.

In the treatment of the case stimulants were used, as whiskey and strychnine and tincture of chloride of iron.

In answer to a question by the President, Dr. Drechsler said the woman gave birth to twins on August 28th, but it was difficult to say how long it was after gestation that the diphtheria appeared, as the woman was not an intelligent one and her statement could not be relied upon.

Dr. Reder asked if a diagnosis of diphtheria was made before the examination of the culture and what was the condition of the throat.

Dr. Drechsler said there was nothing pathologic in the throat, as cultures were made at different times and no bacillus found. The diagnosis was made from the simple inspection of the vagina, for it seemed to him to be a very plain case of diphtheritic membrane; but the patient was not isolated until the diagnosis was confirmed by the Health Department.

Dr. Homan asked if the source of infection was known.

Dr. Drechsler said an effort was made to find out, but nothing could be ascertained. The hygienic surroundings of the patient were very poor.

Dr. Marx asked if there was any trouble with the adnexa.

Dr. Drechsler said none had been observed.

Dr. B. L. Scott asked if the temperature fell after suspension of the douche and if there was any rise during the next few days. He asked in order to determine whether the rise of temperature was a nervous one.

Dr. Drechsler said that was difficult to say in this case. The patient was a very nervous woman, but whether the temperature was due to this or to the douche he could not say; probably both had something to do with it.

Dr. Norvelle Wallace Sharpe said that it was to be regretted that the case was of such a character and the reporter was so busy that a more accurate report could not be made. A true diphtheric growth in the vagina is rare; he had never seen one, and at the time did not recall an authenticated case in literature. It was fortunate that a bacteriologic examination had been made by a competent man, otherwise the diagnosis might justly be questioned. It was worthy of note, too, that if this woman had a diphtheritic vaginitis she had a remarkably low temperature; that might be due to one of two things—a mild infection, or a very low grade of resistance on the part of the host. He was not prepared to agree with the other gentlemen that the vaginal douche, *per se*, caused the rise in temperature; he could not see why this should occur in that region and not in others—for example, as when douching the throat in diphtheric pharyngeal tonsillitis. He saw very few of these cases—practically none—and yet he did not know of any where douching the throat caused a rise

of temperature in a child with diphtheria. He believed it would have been interesting to have tried pilocarpin in this case. The use of this drug in the hands of the staff of the Bethesda Home of this city had been followed by beneficial effects. The case, he thought, was rather obscure from an etiologic standpoint. The only point that was clear was the bacteriologic examination. It seemed to him unusual that the uterine cavity was not infected and possibly the tubes; also the urethra and rectum. That the membrane should isolate itself in that manner and give rise to a temperature of only 98° to 100° was rather extraordinary.

DR. B. L. SCOTT said, after the use of the douche in septic conditions of the uterus, he had never seen the temperature rise more than a degree or a degree and a half; that it should rise to 104 and 105 in this case he thought was evidence that it was purely a nervous manifestation. He remembered a case in the City Hospital where a woman on the third day after confinement showed a rise of temperature from 100 to 103, this continuing for three days. He could find no reason for the rise, until on questioning the woman he found that her parents did not want the child brought home, desiring that it be given to some institution, while the woman wanted to keep her child. This was a constant cause of anxiety. All visitors were immediately excluded, even her parents not being admitted, for a few days; at the same time 15 grains each of bromide of potassium and choral were given, and the temperature immediately fell; no further rise. Here was a case that illustrated in a forcible manner the role played by the nervous system in certain cases of pyrexia.

DR. I. N. LOVE said the announcement on the program recalled the only case of diphtheria in this region he had ever had under his care. It was in a young girl about ten years of age. There had been diphtheria in the family and attention was first called to the child on account of discomfort, for which he prescribed without relief. An examination was suggested and made, and it was found that a pronounced membrane existed on the vulvæ, including the meatus. It was clearly diphtheritic; when removed it clung tenaciously to the surface. This was before the days of the Klebs-Loeffler bacillus, but he was sure of the diagnosis. He used benzoate of soda and bichloride of mercury. In regard to the use of pilocarpin, he said he had been accustomed to use it, but came to the conclusion, after considerable experimentation, that it was a dangerous drug; it was very depressing and should always be accompanied with stimulants. The question of high temperature, he said, was a very important one. Such remarkably high temperatures as recorded some years ago, ranging from 115 to 116, he had never seen. He did, however, have a case of a woman, who was tubercular, who after parturition showed a fever of 106 to 108, and only kept down by baths; this condition existed for weeks, and the patient was losing strength, when he thought the possible disturbance of the nervous system affecting the heat center might be the cause of the continued rise. He recommended the removal of the patient to another city, and the mere knowledge that she was going away seemed to affect her so that her temperature never rose above 103 afterwards, though it was many weeks before it became normal.

DR. MARX said it was very possible that the temperature might have been a purely nervous one; but the douche was not a good procedure, she thought. Dr. Sharpe's remarks about the nose and throat she did not think could hold, because in the uterus, especially so long post-partum, drainage would not be perfect as it would be in the nose and throat, and she did not think any one would dilate. She had asked about the adnexa because she thought that the trouble arising after the douche might have been due to their condition. The most surprising point, she thought, was that the patient did not complain of pain in the vagina. She had never had a case of diphtheritic vaginitis; but in cases of vaginitis, whether simple or gonorrheal, pain was a pronounced symptom. She did not know anything that would bring a patient more quickly in quest of relief than vaginitis, and she thought it quite phenomenal that such a condition should exist without complaint in this regard. In regard to the treatment she thought the old way of swabbing would have been appropriate here, or packing with antiseptic gauze.

DR. GEORGE HOMAN said some of the members present would probably remember a paper read by Dr. F. A. Glasgow before this society last year on the subject of septic endometrial diseases. This point was discussed at that time. In response to an inquiry as to whether in such cases hot douching was not only desirable, but necessary to induce contraction, Dr. Glasgow explained the cause for the rise of temperature following the contraction of the uterus stimulated by these douches, and as Dr. Reder and Dr. Marx intimated, a consequent draining of additional septic material into the circulation. If this were the correct view, and it certainly seemed reasonable to the speaker, the nervous system did not play such an important part as had been suggested this evening.

DR. W. C. MARDORF asked if the douches were given hot.

DR. DRECHSLER said they were about 110°.

DR. MARDORF said douches of hot water stimulated absorption to a marked degree, and in this case, he understood, it was only three weeks after the birth of the child. At that stage involution is not complete, liquefaction is going on, and muscular tissue is dis-

appearing and absorption is very active, and any injection of that sort would be apt to cause a rise of temperature by absorption of septic material. These two factors, the tendency of the hot douche to stimulate absorption, and the receptive condition of the lymphatics and system in general, these two things, he believed, would explain the rise in temperature without considering the part played by the nervous system. The difference between the effects of the douche here and in the throat was because the underlying tissues in the latter are not in as favorable condition for absorption, the conditions being more normal than in this case. He said he had never seen a case of this kind, his experience being more limited in so far as the locality of the membrane was concerned. But he believes the fever in this case was due solely to local causes and the stimulation of absorption.

Dr. B. M. Hypes had but little to add to the discussion which he had heard. He believed the explanation of the rise of temperature was the absorption of ptomaines induced by the administration of hot douches. He added that several times in his experience he had noticed a rise of temperature following hot douches, and had avoided a repetition of this by using lukewarm douches thereafter. He believed if this were applied to such cases a rise of temperature might be avoided. He said he had heard a very interesting paper on Puerperal Septicemia read by Dr. Longstreet of Detroit, two years ago, in which he gave a history of several cases occurring in his practice in Detroit and in the hospitals there, which were treated successfully by the diphtheritic antitoxin method. The presence of diphtheritic germs in these cases was proved by the microscope.

Dr. Chas. J. Orr referred to his experience on one point called up by Dr. Sharpe, and mentioned by Dr. Love, on the use of pilocarpin as a great eliminator in all these septic conditions, especially in diphtheria. Early in his practice he had abandoned the use of this drug because of the discouraging effects noticed, but was again enthused by one of the members of this Society, for whose ability he had the highest regard, and since that time he had tried it in two cases, one of diphtheria and one of obscure diphtheria and scarlet fever, complicated by acute nephritis. Both were in children. He used it in doses of a 20th or 25th of a grain, yet, after his experience with these two cases, he felt that it was a dangerous remedy. Possibly, he said, he lacked nerve in its use, but he had observed that it affected the heart unfavorably, and this was not compensated by the good work expected in elimination.

Dr. Drechsler, in closing, explained that for about three weeks the temperature had been running up to 104° and 105° in the afternoons, and this before any interference. Pilocarpin was not used in this case, although there was no counter-indication for its administration. His experience with that drug was very favorable, always obtaining very good results, but in hospital practice, he added, a patient can be seen as often as desired and watched more closely than in private practice. In using antitoxin, he said that no results were noticed until after a period of from 18 to 24 hours after the injection. In regard to the symptom of pain, he stated that on making an examination with the speculum the patient showed signs of pain, but when questioned about this she declared she felt none; but the speaker thought this was probably a ruse to have the examination discontinued.

Dr. J. C. Falk read a paper entitled

A Specimen of Cyclo-Cephalus.*

DISCUSSION.

Dr. B. M. Hypes: The specimen is not of a simple character as almost all of these are, but a very perfect case of the cyclo-cephalic varity, and also, as Dr. Reder has very properly stated, one of the rhino-cephalic; they occur separately and together, but more frequently together. As a rule, there is more or less variation to be noted in these cases. Although the eye may be apparently single, it is frequently duplex. Dr. Falk should not only preserve the specimen, but he should have it photographed that it might be put on record. Some men in this country have taken the greatest interest in these cases. Dr. B. C. Hirst has written an excellent work and given much information on these forms of monstrosity. There is always an interesting question comes up in connection with every form of monstrosity, and that is the old one of "maternal impressions." The laity almost universally still believe that impressions made upon the pregnant woman are reproduced on the child in utero, and many physicians adhere to the same idea. But little has been written in later years on the subject. The last article of any consequence in later years on the subject was one published some ten years ago by Dr. Barker, a prominent New York physician, who expressed his belief in the influence and effect of maternal impressions. The profession, however, is drifting away from this belief of late, especially as embryology became better understood. The prevalent idea as to the cause of cyclocephalus was the premature closing of the medullary groove, preventing the proper normal development of part of the skull, especially the nasal bone, which divides the two eyes. In feeling the specimen it is found there is a space observable between the nasal bones. This is the reason why the proboscis was developed above the eye instead of below it.

Dr. R. B. H. Gradwohl said he had had occasion to look up the literature on some points in teratology in connection with an epidemic of cerebro-spinal men-

*See page 261, this number.

inigitis transmitted in utero. Ballantyne divided the changes occurring in antenatal growth into three parts. The first was germ life, from the time of ovulation to impregnation; the second from that time to the formation of the morula-mass, and called embryonic life; and the third, fetal life, from the formation of the morula-mass to the full development of the fetus. It is in the third part that these changes occur and also when disease is transmitted, according to Ballantyne, and that he thought this was probable in the case here from the fact that the fetus was fully developed. He believed the profession was beginning to realize that the fetus was subject to the same diseases as seen in infants and adults, and that teratology is but a single chapter of general pathology.

DR. FALK, in closing the discussion, said that he has seen recorded two cases of cyclops born alive, one living 30 hours and the other 72 hours, but he was unable to say if they were born at full term as was this case. These monstrosities are usually acephalic, hence this variety of teratologic beings is rendered incompatible with prolonged life.

One of the later methods of treating post-partum hemorrhage is to carry directly into the uterine cavity a piece of lint or gauze saturated with turpentine. In a recent issue of the *Pacific Medical Journal*, two severe cases are described as having been treated in this way, with instant relief of the hemorrhage. It is claimed that turpentine has a local stimulating action, favoring contraction of the muscles of the uterus.

Perhaps no more striking comment could be made upon the growth of medical science in the last sixty years than the statement that Prof. Robley Dunglison, for eight years (1825 to 1833) taught all branches of medicine in the University of Virginia. Prof. Dunglison was brought to this country to take charge of the medical department in the University of Virginia, which had been founded by Thomas Jefferson, and which was opened April 1, 1825. Jefferson died July 4, 1826, just a half century after the signing of the Declaration of Independence. Dr. Dunglison, who was in attendance, has preserved his last words. In the spring of 1826 Mr. Jefferson's health had become impaired, and he frequently spoke of his approaching end. As July 4th approached he frequently expressed a desire that he might die on that day. On the second of July his illness increased, and on the third day he passed into a state of continuous stupor. About seven o'clock of the evening of that day he awoke, and, seeing Dr. Dunglison at his bedside, said: "Ah! Doctor; you still here?" He then asked, "Is it the 4th?" These were his last words, and he died at 12.50 A. M. on July 4th.

Current Medical Literature

DERMATOLOGY AND GENITO-URINARY DISEASES.

Neglect of Sexual Symptoms in the Treatment of the Male Genito-Urinary Organs.—F. CABBOT* believes that important sexual symptoms are neglected by medical men, because they do not study, largely from a lack of opportunity, sexual hygiene, and, as a consequence, the importance of such matters is little appreciated or understood. Many patients with nervous symptoms have functional disturbance of the sexual organs, which can be detected by skilled examination, and they can be relieved only by local treatment. Certain conditions of the seminal vesicles produce the most varied nervous symptoms. The treatment of these conditions requires special training, which can be gained only by the routine examination of a large number of patients. Two cases are cited showing the beneficial effect of stripping of the seminal vesicles, which were inflamed and thickened. Good results can be obtained by this method of treatment only after a thorough course of training the finger has been completed. The conclusions reached are: 1. Sexual symptoms should be carefully investigated and thoroughly studied. 2. Indiscriminate use of irrigation is distinctly against scientific teaching, its effect on the genital organs often being injurious and causing the spread of the gonococcus. 3. Before urethral instrumentation is employed, every case should be examined per rectum with a finger educated to the rectal touch. 4. Various forms of remote nervous symptoms are directly traceable to disorders of the sexual organs.

DISEASES OF CHILDREN.

Treatment of Rickets With Suprarenal Substances.—STOELTZNER† makes a preliminary report of 76 cases of rickets treated with adrenals. His conclusions are as follows: The general condition, the restlessness, the hypersensitiveness, the sweating and the cranio-tabes are all distinctly influenced for the better. These symptoms often show marked amelioration within three weeks. 2. Teething, the learning to sit, to stand, and to walk, are all made easier. The stiffness of the thorax always begins to disappear very soon after beginning treatment. 3. The abnormal size of the fontanelle, the deformity of the thorax, the rickety rosary, swelling of the epiphyses and the deformity of the extremities are less favorably influenced. 4. The spasms of the glottis resist the treatment positively. 5. Improvement is usually rapid in the first weeks, after that much slower. 6. Interruption of the treatment usually

*N. Y. Med. Rec., Sept. 30, 1899.

†Deutsche Medicinische Wochenschrift, Sept. 14, 1899.

causes a stoppage of the improvement, which begins again with the beginning of the treatment. 7. Even complicated cases (lues, enteritis, bronchitis and pneumonia) show marked improvement.

Diagnosis in Congenital Disease of the Heart.—J. P. C. Griffith* gives the history of a boy, two-and-one-half years old, suffering from congenital cardiac disease. There had been moderate cyanosis from birth; area of cardiac dullness not noticeably enlarged; a bad systolic murmur heard with maximum intensity at the pulmonary cartilage, transmitted under both clavicles, especially so on the left side; at midsternum a loud systolic murmur, which appeared to be distinct in origin compared with the pulmonary systolic murmur; a systolic murmur heard at the apex, less distinctly in the axilla; the second sound accentuated everywhere over the pericardium, but particularly marked at the pulmonary cartilage. Diagnosis based upon these signs was stenosis of the pulmonary orifice, patulous ductus arteriosus, and perforate septum ventriculorum. This is the combination of lesions most likely to occur in congenital disease of the heart, and one which must almost necessarily be present to attain a reasonable degree of compensation for a stenosis at the pulmonary valve.

EYE, EAR, NOSE AND THROAT.

Removal of Foreign Body from the Bronchial Tube.—A. Coolidge, Jr.,† reports a case illustrating the ease with which a foreign body can be removed from a bronchus by means of a straight speculum introduced into the trachea. The patient had worn a tracheotomy tube for twenty years on account of stenosis of the larynx. Twelve hours before being seen the tracheal tube had become detached from the shield and had been inhaled. Examination by X-ray was negative. The patient was etherized and put on his back with the shoulders over the end of the table and the head held downward and rotated to the right side. Through the enlarged tracheal opening a urethroscope with the stylet in place was passed, turned downward, the stylet withdrawn, and the speculum without difficulty pushed down the trachea to within one inch of the bifurcation. For illumination a head mirror was used, with reflected sunlight, and this illumined the field perfectly. The foreign body was seen in the right bronchus, seized with a large pair of alligator forceps introduced through the speculum and removed without difficulty. During the whole time respiration was carried on easily through the speculum. There was no inconvenience from secretion, and the patient showed no ill effects from the operation.

*Phila. Med. Jour., Sept. 30, 1899.
†N. Y. Med. Jour., Sept. 30, 1899.

GYNECOLOGY AND OBSTETRICS.

Data Concerning Deformities of Extrauterine Gestation.—A. F. Currier.* This subject derives importance from the fact that the number of fetuses developed outside the uterus, and born alive, by extraction through an abdominal incision, is not inconsiderable, and this number is increasing as the means of diagnosis and surgical technic become more perfect. A list of cases is given in which deformity of the child was observed at birth, and which have been collected from various sources. An examination of these cases shows that the cause of the deformity was pressure on the hard portions of the pelvis and abdominal walls, due to an absence of amniotic fluid. The fetus in such cases usually lies free in the abdominal cavity, the membranes which at first enveloped it having been digested by the peritoneal secretion. The tissues of the fetus are therefore without their usual protection; hence those parts which are most in motion and most firm are most likely to show the deleterious effects of pressure. No remedy is at present apparent for such mishaps prior to birth. After birth, if the child survives, the asymmetry of the head and face is likely to disappear. Deformities of the lower extremities are susceptible of orthopedic treatment, as are those born by the natural passages.

The Induction of Premature Labor in Cases of Albuminuria.—E. Jarrett† deals only with the necessity for more frequent application of the method of forced delivery to relieve the pregnant uterus in a patient suffering from chronic renal lesions, with a brief consideration of the best method of procedure under such conditions. Attention is called particularly to those cases in which a decided kidney lesion can be made out by chemical and microscopic analysis. In these cases a pathologic condition has been set up, or has been brought to light by the pregnant state, whose results are disastrous in direct ratio as the condition is allowed to remain unrelieved by the termination or removal of its cause. Each case must be judged on its own history and its probable chances of safety, not only for the mother's life, but for her future well-being. If termination of the pregnancy is decided upon, the safest measure is the rapid forced delivery under an anesthetic. After the cervix has been dilated sufficiently to render the insertion of even one finger possible, the dilation is best completed with the hand, as it is not necessary to dilate with such rapidity as to sacrifice the integrity of the cervical fibers.

Remarks Upon Castration in Fibro-Myomata.—W. Schüleinǂ thinks that this operation has unjustly fallen into disuse among surgeons. The medi-

*Jour. Am. M. A., Sept. 30, 1899.
†N. Y. Med. Rec., Sept. 30, 1899.
ǂBerl. klin Woch., Sept., 1899.

cal treatment of the myoma should be first attempted. Hydrastis, hydrastinin and ergotin are favored by the author in treating the hemorrhages, especially the interstitial variety. If all medical and hygiene treatment remains ineffectual, and if the hemorrhages threaten to weaken the individual too much, or if the tumor has grown to such an extent as either to involve neighboring organs or to produce pressure upon them, then operation alone provides the remedy. For the just criticism of the results of the castration operation three points must be considered: 1. Concerning the appearance of the hemorrhages after the operation. 2. The effect of the operation upon the tumor itself; that is, whether it disappears, or remains the same, or grows. 3. The general somatic condition after the operation. The following indications for the castration operation are suggested by the author: 1. In interstitial myomata which have reached the size which would be equal to a pregnancy of the fourth to seventh month. 2. In all smaller or greater tumors, even if they have developed subperitoneally, if the patient is so weakened on account of the tumor that she is in no condition to sustain a more radical operation.

HYGIENE AND BACTERIOLOGY.

Responsibility of the Physician in Vaccination.—J. W. Carpenter.* The subject of vaccination is now of vital interest for several reasons: On account of the recent epidemic of small-pox; on account of the discussion for and against the propriety of legislation one way or another on the subject; on account of the growing sentiment against vaccination. The epidemic could not have existed if the proper precautions had been taken and vaccination had been universal. If care is exercised by the physician in the manner of vaccination and the care of the patient afterwards, the opposition to vaccination will in a great measure be removed. Every vaccination should be cared for as a case of mild sickness, which it is, and for perfect safety the patient should be kept under supervision until the case is over—that is, until the crust comes off. Ordinarily we should refuse to vaccinate unless the patient will come for inspection at least once before the ninth day, and the physician should pronounce on the result, as to whether it is sufficient to afford immunity. The physician should give some information to each person vaccinated, and impress him with the value of the operation; he should prevent unsightly scars, subsequent sickness, and mistakes as to whether the vaccination has taken.

The Compulsory Reporting of Tuberculosis.—S. A. Knopf† reaches this decision regarding this question: In view of the uselessness of reporting cases in many instances, the difficulty in having it done with tact where it might do some good, the annoyance, injustice and harm it may do to the perfectly healthy relatives of the patient, and in view of the well-nigh impossible task of reporting all cases of tuberculosis, the prophylactic measures to be instituted should be left in the hands of the medical practitioners, but especially in the hands of the family physician. Should there be a refractory patient who absolutely refuses to comply with instructions concerning the expectoration, every conscientious physician would consider it a duty to report such a case as dangerous and to demand isolation.

*Jour. Am. M. A., Sept. 30, 1899.
†N. Y. Med. Jour., Sept. 23, 1899.

INTERNAL MEDICINE.

Displacements of the Heart in Lateral Curvature.—T. E. Satterthwaite* describes his general plan of treatment, which has been in the employment of: 1. Resistant exercises with forcible pressure. 2. Carbonated lime baths. 3. Massage. 4. Faradism. 5. Nutrients. The method of exercises in the fully developed double curve is fully given. The first step before each exercise is to make the patient assume a position that in itself tends to reduce the deformity, and have this position maintained, as far as possible, during each one of the sixteen exercises given. In the majority of cases there is advantage in using physical force in the reduction of the deformity. Massage to the muscles of the back is not only a valuable adjunct, but is enjoyed by the patient. The faradic current may be applied occasionally during the entire course of treatment. It should be employed for a few minutes only, so as to actively contract the muscles of the back. The use of warm carbonated lime baths of moderate strength is advocated. The stronger carbonated baths applicable for chronic valvular diseases of the heart are not advisable. In the majority of cases tonics, such as iron and strychnin, and nutrients, such as cod-liver oil and malt extracts, should be used for long periods. Four illustrative cases are reported.

Relation of Uric Acid to Migraine.—J. A. Lichty† has for three years studied the urine with special reference to the relation of uric acid and urea in cases of migraine. The patient was instructed to save the urine of each urination in separate vessels during the entire period of the attack. From these specimens the one voided at the time of the greatest intensity of the headache was selected for examination. After the headache had entirely disappeared the second specimen was collected. The report of three cases is given, from which it appears that: 1, both uric acid and urea were diminished during the height of the headache, but their relation was not disturbed; 2, after the headache the urea increased to

*N. Y. Med. Jour., September 30, 1899.
†Jour. Am. M. A., Sept. 30, 1899.

about what it was between the attacks, while the uric acid increased much more, thus changing the former ratio. When the urine was collected during the whole period of the headache, and after the headache the urine was again collected for the same length of time, and quantitative analyses made of these two collections, the results corresponded with those on which the uric acid theory have been founded. From this it was concluded that the uric acid wave does not appear until the latter part of the attack of migraine, and is at its height when the attack is passing off. It would seem, then, that the increase of uric acid is the result and not the cause of the headache. However, mystery still envelops the mechanism of migraine.

Typho-Malarial Fever.—C. R. Graudy* discusses this subject, including the statistics obtained on the question from reports during the recent Spanish war. The reports of James Ewing, who examined eight hundred cases of malarial fever at Camp Wikoff, and of a number of other observers are freely quoted, together with a short report of two cases under his own observation. In summing up these reports, it is found that typhoid fever may occur in an individual who has already dormant malarial organisms in his blood; that these organisms produce symptoms either at the outset or during the convalescence of the typhoid fever; that they remain quiescent during the course of that disease (only one case to the contrary); that the early malarial symptoms may be checked by quinine without influencing the course of the typhoid fever; and consequently that the two diseases should no more be classed as a "mixed infection" than typhoid fever and measles occurring in the same person. When malarial fever exists with typhoid it is merely a complication, without intimate connection. One can be eliminated, while the other runs its course uncomplicated. The term typho-malarial fever is incorrect as used here and should be abandoned.

Migraine.—S. J. Walker† defines migraine as a distinct disease, of which headache is usually the most pronounced and distressing symptom. Rare cases occur without headache. In the etiology of migraine direct heredity is the leading factor; in a series of fifty consecutive cases, 95 2 per cent. gave a distinct history of direct heredity. Females are more frequently affected; 80.4 per cent. of the cases were females, and in by far the larger proportion the inheritance was on the mother's side. As to the age element, it was found that 60 per cent. began at 10 years of age or under, and 88 per cent. at 20 years or under. Migraine in children is frequently unrecognized. Two cases are cited, occurring in children 3 years old; in both there was a distinct hereditary element. The children had periodic attacks of prostration, complete anorexia, followed in about twelve hours by uncontrollable vomiting. In the beginning there was a moderate elevation of temperature. Recovery was rapid and complete. Between the attacks the children were perfectly well. The diagnosis of migraine was based on these facts: Family history in both; in both attacks were paroxysmal; in both unusually good health was enjoyed between the attacks; in both there was no apparent cause for the attacks; in both there was marked prostration and vomiting, and in both the attacks were self-limited.

*N. Y. Med. Jour., September 30, 1899.
†Jour. Amer. Med. Ass'n., September 30, 1899.

Dangers of Headache Powders.—J. Sobel* reports a case of poisoning following the administration of three "headache powders" at intervals of fifteen minutes. The directions for their use were that, if not relieved by one dose, a second should be taken in half an hour, and in extreme cases three might be taken. The symptoms were marked cyanosis, prostration, cardiac weakness with irregular heart action, coldness of the extremities, dilated pupils, anxious facial expression, but complete consciousness. Acetanilid was found to be the disturbing factor in the powder. No more than three grains of this drug should be dispensed in any one powder. All pharmacists have a right to sell headache powders, but they should prepare their own powders and fortify them if necessary with cardiac stimulants.

The Heated-Blood Treatment of Croupous Pneumonia.—C. E. Elfstrom† reports three additional cases in which this form of treatment was used. Of nine cases so far reported, two died. As these latter already before the injection gave unmistakable signs of meningitis, they should not be counted in calculating the percentage of cures, which in reality has been one hundred per cent. In each of the two fatal cases the injections were made only to ascertain the action on the lungs, without any intention to cure. The method used is to obtain blood by applying a leech to the patient; the blood is diluted with salt solution, heated to 140° F., during two hours, and then injected subcutaneously.

NERVOUS AND MENTAL DISEASES.

Pelvic Diseases and Insanity.—H. A. Tomlinson and Mary E. Bassett.‡ The following conclusions seem warranted from a study of the data furnished by the examination and treatment of the women admitted to the St. Peter State Hospital: Menstrual disorder and pelvic disease, while quite common among insane women, in the majority of the cases bear no apparent relation to the insanity; nor is the intensity of the mental disturbance in proportion to the gravity of the physical disease. In cases where insanity has existed for more than a year, or the

*N. Y. Med. Rec., Sept. 30, 1899.
†N. Y. Med. Jour., Sept. 30, 1899.
‡Jour. Am. M. A , Sept. 30, 1899.

patient has a defective nervous organization, treatment of the disease of the generative organs is practically without effect on the insanity; and in such cases operative interference, resulting in the establishment of an artificial menopause, almost invariably hastens the onset of dementia. Operative interference is called for in the treatment of pelvic disease among the insane for the same reason that would determine the necessity for such treatment among the sane. In order to determine whether or not treatment of the disease of the generative organs will have a curative effect on the insanity, it is important to know all the family and personal history of the patient with regard to the presence or absence of unstable nervous organization and the length of time the insanity and pelvic disease have existed.

The Toxic Origin of Certain Neuroses and Psychoses.—G. W. MCCASKEY.* Many diseases are produced by toxins of diverse kinds, originating largely in the gastro-intestinal tract and in the metabolic processes of the organism, but the clinical picture depends quite as much upon heredity and acquired neuropathic tendencies and environment as upon the precise character of the poison. If a neurologic study of any given case excludes organic disease and hysteria, then a possibly toxic origin becomes a probability and should be considered; and it should be regarded as a possible complicating factor in many cases of structural disease, modifying the clinical picture in a marked degree. The evidences of auto-infection are to be sought for in the urine, the stomach contents, the feces, and the blood. In a certain number of cases of auto-infection a slight febrile reaction is present, its presence or absence probably depending upon whether or not the circulating toxins act upon the thermogenic centers. The vascular changes which result from toxic processes may give rise to nutritional and later inflammatory or even neoplastic changes, may later bring the case within the category of organic disease.

PATHOLOGY AND HISTOLOGY.

Granular Degeneration of the Red Blood Cells.—In staining blood with a mixture of eosin hemoglobin, GRAWITZ† has found certain basophilic granules in the red blood cells, a condition not previously described. The cells in question are filled with shiny blue granules, the cells themselves being in many cases otherwise perfectly normal. The granules have, however, also been found in both megalocytes and microcytes, and even occasionally in poikilocytes. They are not to be found in blood stained with Ehrlich triacid stain. These granules are found in the following groups of cases: In the very severe anemia ensuing in consequence of carcinoma, of auto-intoxication, of chronic suppurative processes in various parts of the body. They were also found in two cases of leukemia. They were not found in the blood of five healthy persons, nor in two cases of tuberculosis, in one of chlorosis, or in one of diabetes. With regard to the signification of these bodies, the author considers that they are certainly not caryolytic, because they occur in cases where there were no nucleated reds. They are probably not regenerative processes of young cells, but are in all likelihood a mark of degeneration in the hemoglobin called forth by the toxins of the various diseases in which they occur.

*N. Y. Med. Rec., Sept. 30, 1899.

†Deutsche Medicinische Wochenschrift, Sept. 7, 1899.

SURGERY.

Surgical Treatment of Abscess of the Lungs.—D. S. FAIRCHILD.* While it may be difficult or impossible to differentiate in many cases between abscess of the lung and an encysted empyema, the means of diagnosis is the same, viz.: puncture of the suspected area by an aspirating needle. If pus is found it should be evacuated by free incisions resecting a rib if necessary, to obtain sufficient drainage. If no pus is found, the finger should be introduced for the purpose of exploration. The failure to obtain pus after its presence has been demonstrated by deep aspiration may be taken as evidence that the abscess is in the lung. If the pleural membranes are not adherent, gauze may be lightly packed against the pulmonary pleura to invite adhesion, and thus protect the pleural cavity when the abscess is opened. Cases may occur in which the abscess must be opened at once; but it is not the safest course when a few days' time can be spared. Irrigation is not advised in either pulmonary abscess or empyema. Each case should be treated by surgical means adapted to the individual case, always having in view the necessity for drainage.

The Present Status of Appendicitis, With Report of Forty-five Cases.—F. L. HUPP† gives the replies received from a number of leading surgeons of the United States to these questions: 1. What do you recognize as the early and cardinal symptoms of fulminating appendicitis, or what symptoms are the forerunners of a fatal issue in these cases provided there be delay in surgical interference? 2. Are you in favor of an operation in all cases as soon as a positive diagnosis is made? 3. What percentage of all cases recover from the first attack with spontaneous resolution? 4. What have grape and berry seeds and other extraneous bodies to do with the exciting cause? Forty-five cases are reported, twenty-two receiving operation, twenty-three not receiving operation. Of the twenty-two cases operated upon three resulted fatally, and nineteen in recovery. In one of the fatal

*Jour. Am. M. A., Sept. 30, 1899.

†N. Y. Med. Rec., September 23, 1899.

cases the appendix contained a pin an inch and a quarter long; the patient was almost moribund when admitted to the hospital. In the second case the patient was moribund on admission and died on the table before the operation was completed. The third died of septic peritonitis, which was well advanced at the time of admission to the hospital. There were five cases of diffuse septic peritonitis receiving operation, with two deaths and three recoveries. There was therefore an operative mortality of forty per cent. in these cases which hitherto have all been doomed.

Some of the Rare Forms of Hernia and Their Radical Treatment.—R. H. Reed* discusses gastric, umbilical, ventral, and labial hernia, giving a report of cases of each variety, with the method of operation employed. The report of these cases of the rarer forms of hernia shows: 1. That all cicatricial tissue must be completely removed. 2. That the most perfect apposition of the separated parts must be secured. 3. That strong, flexible, thoroughly sterilized and absorbable animal tissue should be used for subcutaneous sutures, and that non-absorbable, thoroughly sterilized sutures should be used for approximating the integument. 4. That great care should be taken to avoid the possibility of necrosis, by shutting off the normal blood supply, and thus not only preventing the absorption of the animal suture, but eventually causing the breaking down of the adjacent structures. The best results were obtained from pyoktanin catgut, specially prepared.

Pistol-Shot Wound of the Abdomen Perforating the Stomach; Recovery.—J. N. Le Conte.† The patient, a man of 44 years, was operated upon two hours after being shot in the abdomen. A penetrating wound was found in the anterior wall of the stomach; the edges were pared and it was closed by interrupted Lembert sutures, re-enforced by a second row above. The second wound was in the greater curvature and was closed in the same manner. No other visceral injuires were found. Blood clots and stomach contents were found in the peritoneal cavity, which was thoroughly flushed with hot sterile saline solution, and the wound closed without drainage. The patient was fed per rectum for the first five days. About three weeks later the bullet was located in the subcutaneous tissues, four inches to the right of the spinal column, just below the crest of the ilium, and was readily removed. Convalescence was uneventful, and patient complained of no pain at any time.

Intussusception.—J. C. Munro.‡ All cases should be considered as surgical from the beginning; they may not all demand operation, but the responsibility should be placed in the hands of one ready and able to operate at the earliest opportunity. Over 500 cases have been reported in twenty-five years, three-fourths occurring in infants. The invagination in over half the cases is in the ileo-cecal region. Spontaneous recovery may take place by disinvagination or separation of the inner tube, but in many cases the patients die later of perforation, stricture, etc. Treatment by injection is justifiable in chronic cases, when operation is refused in acute cases, when beyond surgical aid, and within a few hours of the onset of the attack. Operation should be performed as early as possible in acute cases, and at once after trying a simpler procedure, such as injection. In chronic cases it is unwise to delay over a week. Disinvagination is the ideal operation. When this is impossible, partial or complete resection is in order.

Chronic Volvulus.—J. F. W. Ross* discusses the subject of chronic volvulus, chronic intestinal obstruction lasting over a considerable period of time, an obstruction partial and not complete, which may at any time become complete, and set up symptoms of acute intestinal obstruction. Two cases are reported, one of which suffered from volvulus on several previous occasions and was operated on during an attack of acute volvulus, making a good recovery and without subsequent recurrence. The second case was found on operation to be volvulus, produced by absorption of a myomatous tumor of the salpingo-oöphorectomy, performed five years previously. A large abdominal tumor, which had existed for some time, was found to be a sigmoid or omega flexure, packed tightly with fecal matter and half twisted in the narrowing portion of the omega flexure. A full turn would have produced acute volvulus, from which the patient would have lost her life long before. The patient died of shock. The tumor of the uterus had dwindled down until it remained the size of a small orange. At the time of the first operation it was as large as a man's head; during the diminution in size the rectum was stretched and its mesentery lengthened, and after the tumor had undergone a reduction in size, the bowel, as a consequence of this increase in length of bowel and corresponding mesentery, was allowed to take a half turn on itself.

Total Excision of the Stomach Combined With Resection of the Bowel.—Kocher.† The case was one of diffuse carcinoma of the entire stomach wall, the duodenum being perfectly free and the transverse colon and its mesocolon being infiltrated and adherent to the stomach wall. At the operation a complete excision of the stomach and affected portion of the colon was made. The duodenum and the esophagus were united, and an end-to-end anastomosis made between the two ends of the colon. The operation lasted three hours, and the

*Jour. Am. M. A., Sept. 30, 1899.
†N. Y. Med. Jour., September 23, 1899.
‡Phila. Med. Jour., September 23, 1899.

*Jour. Am. Med. Assn., Sept. 30, 1899.
†Deutsche Medicinische Wochenschrift, Sept. 14, 1899.

collapse that followed it was not excessive. The day following the operation there was severe diarrhea, but the general condition was fairly good. On the third day the patient became very much worse, and died on the fourth day. The post-mortem showed well marked evidences of peritonitis, and yet the two bowel sutures were perfectly intact. The mucous membrane of the ileum for the distance of sixteen inches was necrotic. Kocher, is of the opinion that it was this necrosis which gave rise to the peritonitis, and he considers that this necrosis was due to tension upon the superior mesenteric artery, and the consequent interference of the blood supply to the bowel. As a result of large observation and experiments it has been shown that even a temporary tension or compression on the artery that supplies the bowel, may lead to very serious results. It is to be noticed that at the post-mortem absolutely no lesion of the artery was to be found, nor was there any thrombosis in it or in its vein. The practical deduction that Kocher makes is, that in operations of this sort, which necessarily must take a great deal of time, pressure on the vessels of the bowel is to be avoided as much as possible.

History of a Case of Gastrectomy.—M. H. RICHARDSON* gives a brief outline of a case of gastrectomy for carcinoma of the pylorus; the patient died nine months after the operation from recurrence. The most important point in connection with the surgical treatment of cancer of the stomach is the necessity of early explorations. Cancer of the stomach, if extirpated in its earliest stages, offers as good a chance for cure as cancer of the uterus. If one waits for a positive diagnosis, he waits too long; for when a tumor can be felt, it is usually too late to operate. If he operates before a tumor can be felt, his operation may be unnecessary. In successful operations there is always prolongation of life, with a possibility of permanent cure. Total extirpation is technically possible only when the duodenum or jejunum can be brought to the esophagus. Theorectically the esophagus may be closed, and the duodenum brought to the opening in the abdominal wall for an artificial mouth.

A Further View of the Management of the Deformity of Hip Disease.—A. B. JUDSON† refers to the method first introduced ten years ago, which may be said to consist in the education of the patient, wearing the hip splint, to the habitual observance of the normal rhythm of human locomotion. The deformity and fictitious shortening are caused by the patient's instinctive and habitual effort to keep the affected limb clear of the ground by elevating the pelvis on that side, with adduction as a necessary accompaniment. The affected foot visits the ground for a moment only, while the well one lingers on the ground, and the natural rhythm or time is destroyed. If the patient resumes true time, which can be done by an effort of the will or as the result of drill, the affected limb gives up some of its adduction and flexion in order to reach the ground more conveniently to do its share of the work. With this come also horizontal adjustment of the pelvis and a decrease of shortening. Photographs of three cases are shown which illustrate the results of this method of treatment in overcoming the deformity.

*Phila. Med. Jour., September 30, 1899.
†N. Y. Med. Rec., Sept. 30, 1899.

Fibrosarcoma of Abdominal Wall. — A. J. BOUFFLEUR* reports a case of dermoid fibroma, beginning in Poupart's ligament and extending around the iliac vessels into the pelvis. The tumor was completely removed; it was found necessary to resect an oblong section of the peritoneum, which was intimately attached to the inner lobe. The greater part of the tumor, with all of Poupart's ligament and part of the fascia lata, was removed. The iliac part of the tumor, including the iliac fascia, was rapidly dissected away, and the iliac artery and vein were dissected out, their walls being infiltrated throughout the whole extent of the tumor. The method of closure of the wound was that used in herniotomy: closure of the peritoneum, restoration of muscular continuity, securing tendinous or aponeurotic support, and closure of the skin over the deeper structures, but not utilizing it in any way as a supporting element in the closure of the defect, nor including it in the deep sutures. The wound healed promptly in ten days; the patient wore an abdominal support for six months. There was no recurrence after fifteen months.

Excision of High Rectal Carcinoma Without Sacral Resection.—N. SENN† is opposed to the sacral route in all operations for the radical removal of the carcinomatous rectum. Radical operation can be performed without this additional mutilation. All legitimate and well-grounded indications for the radical removal of high rectal carcinoma can be met and ample room for performing the operation secured by a primary excision of the coccyx. In extirpation of the rectum below the peritoneal reflexion even the removal of the coccyx is superfluous. In excision of the upper portion of the rectum the peritoneal cavity must be freely opened, and in such cases ample space is secured by the removal of the coccyx. If this does not furnish the necessary space it is much safer to resort to the combined operation than to persist in creating additional space by sacral resection. As legitimate contraindications to radical operations are regarded all cases in which the proximal limits of the tumor are beyond the reach of the index finger, extensive involvement of the retroperitoneal glands and marked extension of the disease beyond the rectal wall—that

*Jour. Am. Med. Assn , Sept 30, 1899.
†Phila. Med. Jour., Sept. 30, 1899.

is, extensive infection of the pararectal connective tissue. Two cases of rectal carcinoma are reported, representing the two principal pathologic varieties of this affection. Both cases were operated on more than two years ago; in both there was recovery, one with partial control over the rectum, in the other with preservation of full use of the sphincter muscles.

Subcutaneous Rupture of the Spleen; Extirpation.—Krabbel* reports a case of a boy of 10, who fell down stairs and struck on his abdomen, and who was brought into the hospital in a condition of collapse, with signs of internal hemorrhage. Laparotomy four years after operation. Abdomen found filled with bright red blood coming from the spleen, which was literally broken into four pieces. The entire organ was removed, and a tampon of iodoform gauze inserted. The recovery was uneventful; boy left the hospital three weeks after operation. At this time there was 74 per cent. of hemoglobin.

Ankylosis of the Hip Joint.—Taylor† considers that osteotomy is not always necessary, even if the ankylosis be complete, and reports a case where forcible correction of the deformity under ether with fixation, constant for six months, was sufficient to produce a most excellent result. In many cases, however, the osteotomy is necessary, and then one may get an excellent position, but must be satisfied with a stiff joint.

Gastrostomy.—F. S. Dennis‡ recommends the operation invented by Marwedel as the best method of performing gastrostomy. It matters little what external incision is made; the chief point is the opening in the stomach. Having opened the peritoneal cavity, the stomach is drawn and stitched to the sides of the external wound in such a manner as to shut off the peritoneal cavity completely. The exposed stomach wall is then incised for several inches. This incision reaches down only to the mucous membrane, dividing the peritoneal and muscular coats. In this way a gutter is formed, the floor of which consists of the outer surface of the mucous membrane of the stomach. Into this gutter a rubber tube is laid, and the peritoneal and muscular coats are now stitched together over the tube; thus a canal is formed of tissue into which the peritoneum does not enter, since the posterior part of the canal is formed of the mucous lining of the stomach, and the anterior and lateral surfaces of the muscular coat of the stomach wall. A permanent fistula is now formed of tissue which shows no tendency to contract and no inclination to close on account of peritoneal adhesions. This canal remains permanently patent, and the tube can be withdrawn by the patient himself for purposes of cleansing, and re-introduced without difficulty. There is no leakage in the fistula, and the external orifice is as free from irritation as the lips of the normal mouth. A brief history of a case of unusual interest is given; it is one of stricture of the esophagus caused by cicatricial contraction, due to inflammatory new formation, the result of typhoid ulcers in the esophagus. This operation was performed, the patient made an uneventful recovery and gained steadily in weight. He is perfectly well and enjoys his meals through the rubber tube. He is nourished by milk and eggs, minced meat and any form of food that can be reduced to a pulp so as to pass through the tube into the stomach.

*Deutsche Medicinische Wochenschrift, Sept. 7, 1899.
†Pediatrics, August 15, 1899.
‡Phila. Med. Jour., September 30, 1899.

Diagnostic and Therapeutic Importance of the X-ray in Medicine and Surgery.—Grunmach.* Among the diagnoses which may positively be made by the X-rays are: Early diagnosis of aneurysm of the aorta; determination of the boundaries of the heart in emphysema; determination of apparent and real hypertrophy of the heart. With the aid of the fluoroscope abnormal rhythm of the heart and the effects of drugs upon it can be carefully studied. The differential diagnosis between tumors of mediastinum and aneurysms of the aorta can absolutely be made. Aneurysms of the various arteries and the calcification of these various arteries can be made out. Respiratory tract: Tumors and foreign bodies in the larynx. Tumors, foreign bodies, gangrenous areas in the lungs, exudate into the pleural cavity, thickness of the pleura, and pneumothorax, are all distinctly to be made out. Gastro-intestinal tract: Foreign bodies in the esophagus, stomach and bowel can be detected, and the differential diagnosis between the tumors and diverticula of the esophagus made. Furthermore, abnormalities in the shape and position of the stomach can be made out by means of inflation, or the introduction of sounds and bismuth. Tumors of the omentum, the bowel, the pancreas and the liver, have been made out. Urinary apparatus: Stone in the bladder, and the kidney and tumor of the kidney. Head: Fractures of the skull, splinters of bone and tumors in the brain, foreign bodies in the eye and in the nose, empyema of the frontal sinuses and of the antrum of Highmore. The importance of the X-ray in purely surgical cases needs no explanation here. Therapeutically, the author has good reports of the effect of the X-ray in cases of neuralgia of the facial, occipital and intercostal nerves. In some cases joint and muscle rheumatism were favorably influenced; in others they were not. In the treatment of certain affections of the skin, notably lupus, eczema and psoriasis, excellent results have been obtained. The depilatory action of the X-ray has found a use in cosmetic medicine. The therapeutic effect of the X-ray in pulmonary tuberculosis has up to the present time been nil. All in all, the X-ray has to be considered rather as an aid to diagnosis than as a therapeutic agent of the first rank.

*Deutsche Medicinische Wochenschrift, Sept. 14, 1899.

Practical Therapeutics.

Infiltration Anesthesia. — The method of SCHLEICH, which has been so extensively employed and commented upon, is certainly losing its popularity. When his method of local anesthesia was first brought out it attracted marked attention, and while it was generally restricted to minor operations, in some cases it was used in major. Later studies have shown that cocain was the only efficient element in the Schleich mixture. Solutions of this substance are unstable and cannot be sterilized by heat. This difficulty has been the chiefest one in preventing extensive adoption of Schleich's method, particularly for deep incisions and extensive operations, nearly all such wounds having become infected. Lately Heinze has been experimenting with eucain B. This drug is the equal of cocain as a local anesthetic; it is less irritant, less toxic, and its solutions may be perfectly sterilized without decomposition or in any way interfering with their action. The solution recommended by Heinze is made as follows:

℞ Eucain B ..... gr. 1½
Sodium chloride ..... gr. 12
Water ..... oz. 3

Relative Toxicity of Cocain and Eucain.—A. H. PECK.* 1. The action of cocain is inconsistent; one never knows whether the symptoms occasioned by like quantities of the drug, in animals or individuals, under like circumstances, will be similar or dissimilar. 2. The action of eucain is constant. The symptoms occasioned by the use of like quantities in animals under like circumstances, and, so far as his experiments have gone, in different individuals also, are the same. 3. The first action of cocain on the heart is that of a depressant, and on the respiration that of a mild stimulant; the after-effects being, on the heart that of a decided stimulant, and on the respiration that of a decided depressant. 4. The first action of eucain on both the heart and respiration is that of a stimulant, the after-effects being that of a decided depressant. 5. Cocain causes death in animals by paralyzing the muscles of the respiratory apparatus, the heart's action continuing in a feeble way for a brief period after breathing ceases. 6. Eucain causes death in animals by paralyzing the muscles of the heart and of the respiratory apparatus, they ceasing to operate simultaneously. 7. Eucain in toxic doses nearly always causes nausea, and occasionally vomiting. 8. Cocain is much less nauseating and scarcely ever causes vomiting. 9. Eucain is decidedly a diuretic, causing vesical discharge in a majority of instances in which a toxic dose is used. 10. Cocain is not a diuretic to any appreciable extent, vesical discharge having occurred in only one instance in connection with all his experiments. 11. The pupils of the eyes in nearly all cases of cocain poisoning do not respond to light, and the eyeballs bulge more or less from their sockets. 12. The pupils of the eyes in most cases of eucain poisoning do respond feebly to light, and the eyeballs rarely bulge from their sockets. 13. The action of the toxic doses of eucain is more like that of a paralyzing, tetanoiding, convulsion-producing agent, than it is like an anesthetizing one, the plantar and cremasteric reflexes nearly always remaining active. 14. Toxic doses of cocain cause general anesthesia in connection with the other symptoms in the majority of cases. 15. True tetanus of all striped muscles of the limbs and Cheyne-Stokes' breathing nearly always occur with the use of cocain; but either occurs seldom when eucain is used. 16. Cocain is at least three times more toxic than beta-eucain, and alpha-eucain is as toxic as cocain. 17. Boiling does not destroy the efficacy of cocain, but it does modify it; and boiling in no degree lessens the efficacy of eucain.

*Jour. Am. M. A., September 2, 1899.

Inunctions of Creosote in Malaria.—This treatment has again been revived. Many years ago this substance was recommended for this purpose, but it was given by the mouth. In using it, the creosote is mixed with equal parts of olive oil and rubbed into the skin. Promptly following the application the therapeutic effects of the drug are obtained. It is found to be especially useful in cases of children, to whom it is somewhat difficult to give large doses of quinine, and it is also found efficient in those cases in which there is a marked disturbance of the alimentary tract and sluggish portal circulation.

A New Series of Therapeutic Agents.—K. SCHWICKERATH* has succeeded in preparing soluble compounds of mercury, silver, copper, and iron with a proteid substance, nuclein. They contain the metals in true chemical combination. They do not precipitate solutions of albuminous substances. Practical, prolonged experiments and investigations have shown that these new compounds possess all the therapeutic advantages of the respective inorganic salts, without their disadvantages; they are able to take the place of the inorganic compounds, mercury bi-chloride, silver nitrate, and copper sulphate, in the treatment of infectious inflammations. These compounds consist of the following: Nucleol, a pure nuclein obtained from yeast: mercurol, a nucleide of mercury, containing about ten per cent. of the latter in organic combination; nargol, a nucleide of silver, containing about ten per cent. of the latter; cuprol, a nucleide of copper, of six per cent. strength; ferrinol, a nucleide of iron, containing six per cent. of the latter. A few data concerning these compounds are submitted; more detailed information as to the chemistry of these products is to be published later.

*N. Y. Med. Jour., September 30, 1899.